

REMARKS

The Office Action has been carefully reviewed. Reconsideration and allowance of the claims in light of the foregoing amendments is respectfully requested. A petition and fee for a two-month extension accompanies this response.

Restriction to one of the following inventions was required under 35 U.S.C.121 between group 1, claims 1-11, drawn to a method of making gold coated magnetic nanoparticles, classified in class 427, subclass 217 and group 2, claims 12- 16, drawn to gold-coated magnetic nanoparticles, classified in class 428, subclass 403. The Office Action stated that the inventions were distinct, each from the other because of the following reason: inventions I and II are related as process of making and product made. Thus, the inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP 806.05(f)). In the instant case the product as claimed can be made by a materially different process such as ion- plating. The Office Action concluded that because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Applicants' Representative, Mr. Bruce Cottrell on March 17,2005, a provisional election was made with traverse to prosecute the invention of group I, claims 1- 11. Affirmation of this election must be made by applicant in replying to this Office action. Claims 12-16 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicants hereby confirm the election to prosecute the invention of group I, claims 1- 11. The traversal is withdrawn. Claims 12-16 have been cancelled without prejudice.

Claims 1-11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over either (1) Zhou ("Nanostructures of gold coated iron core-shell nanoparticles and the nanobands assembled under magnetic field") or (2) Cheon et al. (U.S. 6,783,569), each

in view of Oldenburg (U.S. 6,685,986). The Office Action stated that regarding claim 1, Zhou and Cheon et al. each disclose gold-coated magnetic nanoparticles. (See Zhou, abstract and Cheon, col. 8, lines 64-68). Oldenburg et al. teach a method of coating gold on a core, in particular silica core, comprising forming a suspension of silica particles in a liquid, forming a solution comprising a reducible gold compound and a reducing agent, adding the gold solution in the silica suspension, and allowing time sufficient for the reducible gold compound forming a gold coating on the silica core. (See Oldenburg, col.10, lines 5-21; col. 11, lines 23-37; and col.11, line 66 to col. 12, line 25). Thus, Oldenburg et al. teaches a method similar to the claimed method except that the core is silica instead of magnetic nanoparticles. Oldenburg et al. also points out that the other coating methods suffer limitations in controlling or selecting the resulting dimensions of the core radius or the coating thickness. (See Oldenburg, col. 2, lines 1 - 15). Therefore, the Office Action concluded that it would have been obvious for one having ordinary skill in the art to be motivated to apply the coating method taught by Oldenburg et al. in making the gold-coated magnetic nanoparticles taught by Zhou or Cheon et al. because the Oldenburg et al. method is superior to the other method in terms of controlling the dimensions of the resulting product.

With regards to claims 2 and 3, the Office Action pointed out Cheon et al., at col. 4, lines 14-48. With regards to claims 4 & 5, the Office Action pointed out Oldenburg et al., at col. 12, lines 1-10. With regards to claims 6-10, the Office Action pointed out that Oldenburg et al. teaches using a linker molecule to facility surface coating of gold at col. 7, lines 11-34. The Office Action added that Oldenburg et al. suggests silane as the linker because the core is silica. The Office Action concluded that, one having ordinary skill in the art, based on this particular teaching of Oldenburg et al., would have found it obvious to select linker molecule that's correspondingly suitable for the core chosen. Finally, with regards to claim 11, the Office Action pointed out Cheon et al., at col. 8, lines 56-62.

Applicants have amended claim 1 to clarify that the present invention is directed to a process wherein the gold-coated magnetic nanoparticles have the gold coating formed directly on the magnetic nanoparticles following the dispersion of magnetic nanoparticles within a solution to form a suspension. Applicants submit that Zhou et al.

involves the initial preparation of iron nanoparticles by a reverse micelle process followed by deposition of a gold-coating within a micelle solution. The presently claimed process is neither taught nor suggested by Zhou et al. Oldenberg et al. distinctly contemplate deposition of a gold coating upon a dielectric or semiconductor nanoparticle core, preferably involve an intermediate silica layer or core material, and generally teach the use of linker molecules to attach metal or metal-like nanoparticles to the core but only with a non-continuous coating that requires subsequent reduction of additional metal to yield a continuous coating. Accordingly, it is submitted that the process of Zhou et al. cannot be suitably combined with the process of Oldenberg et al. Rather, the presently claimed process is uniquely different than either the process of Zhou et al or Oldenberg et al. and neither reference teaches or suggests the presently claimed process. Accordingly, the rejection of claims 1-11 over Zhou et al. in view of Oldenberg et al. is urged to be withdrawn.

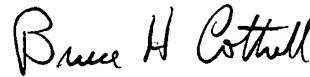
Further, Applicants submit that the presently claimed process is neither taught nor suggested by Cheon et al., cited by the Office Action as disclosing gold-coated magnetic nanoparticles. The process of Oldenberg et al. involves deposition of a gold coating upon a dielectric or semiconductor nanoparticle core, preferably involving an intermediate silica layer or core material; and generally teaches the use of linker molecules to attach metal or metal-like nanoparticles to the core but only with a non-continuous coating that requires subsequent reduction of additional metal to yield a continuous coating. Accordingly, it is submitted that the process of Oldenberg et al. does not yield the gold-coated magnetic nanoparticles described by Cheon et al. Rather, the presently claimed process is uniquely different than the teachings of Cheon et al. or Oldenberg et al. and this combination of references does not teach or suggest the presently claimed process. Accordingly, the rejection of claims 1-11 over Cheon et al. in view of Oldenberg et al. is urged to be withdrawn.

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Docket No. S-100,503
In Response to Office Action dated March 24, 2005

In view of the foregoing amendments and remarks, claims 1-11 are urged to be allowable over 35 U.S.C. 103. If the Examiner believes there are any unresolved issues despite this amendment, the Examiner is urged to contact the applicants' attorney undersigned below for a telephonic interview to resolve any such issue. A favorable action is solicited.

Respectfully submitted,

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